

[illegible]

842 T A F C F S T G O G L A A L E
→ 5-B

226 887 T Q G W C L C G A A Q P S S I
← 5-A

241 932 S F A C L S L C S G P P P P I

256 977 A P T C R G P T L L Q H V F I

271 1022 V S P G A T L V G P H G P L I

286 1067 S G O L A A F H I A A P L P V
→ 5-C

301 1112 T A T R W D F G D G S A E V I
← 5-B

316 1157 V A G P A A S H R Y V L P G E

331 1202 T H V T A V L A L G A G S A I

346 1247 L G T D V Q V E A A P A A L E

361 1292 L V C P S S V Q S D E S L D I

376 1337 S I O N R G G S G L E A A Y I

391 1382 I V A L G E E P A R

406 1427

421 1472



FIG 1 Cont.

436 1517 [REDACTED]

451 1562 [REDACTED] **Exon 7**

466 1607 [REDACTED] / W I G F S T V Q G V E V G I

481 1652 [REDACTED] A P Q G E A F S L E S C Q N V

496 1697 [REDACTED] P G E P H P A T A E H C V I

511 1742 [REDACTED] G P T G W C H T D L C S A I

526 1787 [REDACTED] I S Y V C E L O P G

541 1832 [REDACTED]

556 1877 [REDACTED]

571 1922 [REDACTED] **Exon 9**

586 1967 [REDACTED] A F L T T A E F G T O E L F

601 2012 [REDACTED] P A Q L R L O V Y R L L S I

616 2057 [REDACTED] **Exon 11**

631 2102 [REDACTED]

646 2147 [REDACTED]

661 2192 [REDACTED]



FIG 1 Cont.

676 2237 [REDACTED]
[REDACTED]

691 2282 [REDACTED] **Exon II-A**
[REDACTED] V T L H G C

706 2327 [REDACTED]
[REDACTED] V L M L P G D L V G L Q H I

721 2372 [REDACTED]
[REDACTED] V G P G A L L H C S P A P G I

736 2417 [REDACTED]
[REDACTED] P G P Q A P Y L S A N A S S V

751 2462 [REDACTED] → **II-B**
[REDACTED] L P H L P A Q L E G T W A C I

766 2507 [REDACTED]
[REDACTED] V C A L R L L A A T E Q L T V

781 2552 ← **II-A**
[REDACTED] L L G L R P N P G L K M P G F

796 2597 [REDACTED]
[REDACTED] Y E V R A E V G N G V S R H I

811 2642 [REDACTED]
[REDACTED] L S C S F D V V S P V A G L F

826 2687 [REDACTED]
[REDACTED] I Y P A P R D G R L Y V P T

841 2732 [REDACTED]
[REDACTED] V G S A L V L Q V D S G A N A

856 2777 [REDACTED]
[REDACTED] P A T A R W P G G S V S A R F

871 2822 [REDACTED] → **II-C**
[REDACTED] E N V C P A L V A T F V P G C

886 2867 [REDACTED]
[REDACTED] P W E T N D T L F S V V A L I

2912 [REDACTED] ← **II-B**
[REDACTED] E G G C A G T G A G G G G A C A C T G G T G G A C G T G G T G G A A A C



FIG 1 Cont.

[illegible]



FIG 1 Cont.

1141 3632 **accgaccccatcacttctaccgagacagctgacctcactcacc**
I R F V T F Y F H F L P S P I

1156 3677 **atgttctcttaccgcttggagcttcacgacagctccctgacctc**
I V L Y T W D F G D G S P V I
 ← **[5-A]**

1171 3722 **accgagacccatcacttctaccgagacagcttaccgctccgagggc**
I Q S Q P A A N H T Y A S R C

1186 3767 **accgacccagctgacctgagggctcaccgacagctgagggctgac**
I Y H V R L E V M N T V S G A

1201 3812 **accgacccagggagatgtgagggcttctgagggagctccgagggactc**
I A Q A D V R V F E E L R G I
 → **[5-C]**

1216 3857 **accgagacccatcacttctaccgagacagctccgagggccctgacctc**
I V D M S L A V E Q G A P V V
 ← **[5-B]**

1231 3902 **accgagccccagctgacctgagggctcaccgacagctcagctgagggctc**
I S A A V Q T G D H I T W T F

1246 3947 **accgaggggagggagggagggagggagggagggagggagggagggaggg**
I M G D G T V L S G P E A T V

1261 3992 **accgaggggagggagggagggagggagggagggagggagggagggaggg**
I H V Y L R A Q N C T V T V C

1276 4037 **accgacccagggagggagggagggagggagggagggagggagggagggaggg**
I A S P A G H L A R S L H V I
 → **[5-D]**

1291 4082 **accgaggggagggagggagggagggagggagggagggagggagggaggg**
I F V L E V L R V E P A A C I
 ← **[5-C]**

1306 4127 **accgagggagggagggagggagggagggagggagggagggagggagggaggg**
I T Q P D A R L T A Y V T G I

1321 4172 **accgagggagggagggagggagggagggagggagggagggagggagggaggg**
I A H Y L F D W T F G D G S I

1336 4217 **accgagggagggagggagggagggagggagggagggagggagggagggaggg**
I T T V R G C P T V T H N F I
 → **[5-E]**

1351 4262 **accgagggagggagggagggagggagggagggagggagggagggagggaggg**
I S G T F P L A L V L S S R V
 ← **[5-D]**

1366 4307 **accgagggagggagggagggagggagggagggagggagggagggagggaggg**
I R A H Y F T S I C V E P E V

1381

[illegible]



FIG 1 Cont.

1606 **P E N I I V T A E H E V G S /**
 5072 **AGGACGGCATCTTGGTCTATGTCCTGCACTCATAGAGGAGCTG**
 1621 **D D S I F V Y V L Q L I E G I**
 ← **[5-I]**
 5117 **TAGGTGCTGGGCAATGACCGCTACTTCCCTACCAACCAACGGTG**
 1636 **D V V G G G R Y F P T N H T /**
 5162 **AGGTGCAAGGCGTGGTGAAGGATGCTACCAACCTCTCTACAG**
 1651 **D L Q A V V R D G T N V S Y /**
 → **[5-J]**
 5207 **TGGACTGCTGGAGGACAGGAGGCTGAGCTGGCGGCGAGCGAG**
 1666 **V T A W R D R G P A L A G S /**
 5252 **TAAGGCTTCTCGCTACCGTGCTGAGGCGCGGACCTACCATGTC**
 1681 **X G F S L T V L E A G T Y H /**
 ← **[5-K]**
 5297 **TAGCTGCGGCGCACTACCATGCTGAGGCACTGCTGGGCGCTACTG**
 1696 **D L R A T N M L G S A W A D /**
 5342 **ACCATGGACTTCGTGGAGCGCTGGAGTGGCTGATGGTGACCGAG**
 1711 **P M D F V E P V G W L M V T /**
 5387 **TCCCCGAACCAAGCTGAGCTCAACCAAGCTCACCTCAAGTGGC**
 1726 **P P N P A A V N T S V T L S /**
 5432 **TAGCTGGCTGGTGCGAGTGCTGCTATACACTTGGTCTCTGGAG**
 1741 **E L A G G S G V V Y T W S L /**
 → **[5-K]**
 5477 **TAGGGGCTGAGCTGGGAGACCTCCGAGGCACTTACCACCAATAGC**
 1756 **E G L S W E T S E P F T T H /**
 5522 **TCCCCACACCCGCGCTGCACTTGGTCAACATGACGGCAGGGAAC**
 1771 **P P T P G L H L V T M T A G I /**
 5567 **TGGCTGGGCTCAGCCAAAGCCACCGTGGAGTGGATGTGCAAGTC**
 1786 **P L G S A N A T V E V D V Q /**
 5612 **TGTGTGAGTGGCTCAGCATCAGGCGCAGGAGCCCGAGGAGCAG**
 1801 **P V S G L S I R A S E P G G /**
 5657 **TTGCTGGCGCGCGGCTCTCTGTGCTCTTTGGGGGCAAGCTGGCC**
 1816 **P V A A G S S V P F W G Q L /**
 ← **[5-L]**
 5702 **ACGGGCACCAATGTGAGCTGGTGTGCTGAGCTGTGCGCGCGGCGAG**
 1831 **P G T N V S W C W A V P G G /**

5747 TGAACGCTGACCTCATATGACGATGATGTTCCCGGATGCTGAT
1846 T K R G P H V T M V F P D A C

5792 ACGTTCTGCATCCGCGCTCAATGCGCTGCAACGCACTGAGCTGCTG
5792 T F S I K L N A S N A V S W Y

5837 TCAACCCACGTAACAACCTCAACCGGCAAGGAGCGCAGCTGAGGCTG
1876 T A T Y N L T A E E P I V G I
→ 15-L

5882 ATGCTGTGGCCAGCAACCAAGCTGCTGACGCCGCGGCGAGCTGCTG
1891 T L W A S S K V V A P G Q L V
← 15-K

5927 CATTTTCAGATGCTGCTGCTGCGGAGCTCAAGCTGTCACTCTCAAT
1906 T F Q I L L A A G S A V T F F

5972 TCGAGGTCCGCGCGGCGGCAACCGCAACCTGCTCCCGCGGCGCGCGT
1921 T Q V G G A N P E V L P G P F

6017 TCTCCACAGCTTCCCGCGCGTGGAAACCAAGTGGTGAGCGGL
1936 T S H S F P R V G D H V V S V

6062 TGGGGCAAAAACCAAGTGAAGTGGGGCCAGGCGCAGGTGGCGCAT
1951 T G K N H V S W A Q A Q V R I

6107 ATGGTGTCTGAGGCGCGTGAAGTGGGCTGCAATGCCCAACTGTCTG
1966 T V L E A V S G L Q M P N C C

6152 TACGCTGGCATCGCCACGGGCGCACTGAAAGAACTTCAACAGCGCG
1981 T P G I A T G T E R N F T A F

6197 ATGCAAGCGGCGGTGTGAGGTGCGCTACCACTGGTACTTCTCTGCTG
1996 T Q R G S R V A Y A W Y F S I
→ 15-M

6242 TGAAGGTCCAGGCGCGCACTGCGTGGTCACTGCTGTGGGCGCGCGAC
2011 T K V Q G D S L V I L S G R I

6287 ATCACTACACAGCGCGTGGCGCGGCGCTGTTGGAAGATCCAGGTG
2026 T T Y T P V A A G L L E I Q V
← 15-L

6332 TCGCGCTTCAACGCGCGTGGGCGAGTGAAGAACCGCAGCTGGTGTCTG
2041 T A E N A L G S E N R T L V I

6377 TGGTTCAAGGACGCGCTCCAGTATGTGGCGCTGCAAGAGGCGCGCG
2056 T V Q D A V Q Y V A L Q S G I

6422 TGGTCAACCAACCGCTCGGCGCGAGTTTGAAGGCGCGCAACAGCGCG
2071 T F T N R S A Q F F A A T S I



FIG 1 Cont.

2086 6467 [REDACTED]
 [REDACTED] F R R V A Y H W D F G D G I
 2101 6512 [REDACTED]
 [REDACTED] G O D T D E P R A E H S Y I
 2116 6557 [REDACTED]
 [REDACTED] R P G D Y R V O V N A S N L A
 2131 6602 [REDACTED]
 [REDACTED] F F F V A O A T V T V O V L A
 2146 6647 [REDACTED]
 [REDACTED] R E F E V D V V L P L O V I
 2161 6692 [REDACTED] → [IS-N]
 [REDACTED] I R R S O R N Y L E A H V D I
 2176 6737 [REDACTED]
 [REDACTED] R D C V T Y O T E Y R W E V I
 2191 6782 [REDACTED]
 [REDACTED] R T A S C O R P G R P A R V I
 ← [IS-N]
 2206 6827 [REDACTED]
 [REDACTED] P G V D V S R P R L V L P I
 2221 6872 [REDACTED]
 [REDACTED] A L P V G H Y C F V F V V I
 2236 6917 [REDACTED]
 [REDACTED] G D T P L T O S I O A N V I
 2251 6962 [REDACTED]
 [REDACTED] A P E K L V P I E G G S Y
 2266 7007 [REDACTED]
 [REDACTED] R V W S D T R D L V L D G S I
 2281 7052 [REDACTED]
 [REDACTED] Y D P N L E D G D O T P L I
 [REDACTED] [IS-N]
 2296 7097 [REDACTED]
 [REDACTED] H W A C V A S T O I
 7142 [REDACTED]



FIG 1 Cont.

2311 [REDACTED]

7187 [REDACTED]

2326 [REDACTED]

7232 [REDACTED]

2341 [REDACTED]

Exon 17

7277 [REDACTED]

2356 [REDACTED]
L I R S G R V P I V S L E C

7322 [REDACTED]

2371 [REDACTED]
S C K A Q A V Y E V S R S

7367 [REDACTED]

2386 [REDACTED]
V Y L E G K C L N C S S G S

Exon 18

7412 [REDACTED]

2401 [REDACTED]
R G E

7457 [REDACTED]

2416 [REDACTED]

7502 [REDACTED]

2431 [REDACTED]

7547 [REDACTED]

2446 [REDACTED]

7592 [REDACTED]

2461 [REDACTED]

7637 [REDACTED]

2476 [REDACTED]

Exon 19

7682 [REDACTED]

2491 [REDACTED]
W H D A E D A C

7727 [REDACTED]

2506 [REDACTED]
V P L V Y A L L L R R C R O C

7772 [REDACTED]

2521 [REDACTED]
I C E E F C V Y K G S L S S Y

7817 [REDACTED]

2536 [REDACTED]
I A V L P P G E R P H F E V C



FIG 1 Cont.

[illegible]

2791 8582 TGGGCTCTCTGTCTATGCGGCTCCGCGGCTCTGTCTGCA
R S L L C Y G G A F G P G C I

8627 TCTCCATCCCGGAGCTCTTCAGCGGCTCTGCGCAACCTCAAT
P S I P E A F S G A L A N L S
→ 23-C

2821 8672 TACATGATGCACTCATCTTCTCTGATGAGCTCCAATCCCTTCTC
V V V Q L I F L V D S N P F I
← 23-A ← 23-B

2836 8717 TTGGCTATATCAGCAACTACACGCTCTCAGCAAGGTGGCTCC
P G Y I S N Y T V S T K V A S

2851 8762 ATGGCATTCGAGACACAGCGCGGCTCTCAGATCCCATCGAGCGG
H A F Q T Q A G A Q I P I E F

2866 8807 TTGGCTCAGAGCTTCCCATCAGCTTGAAGGTGCGCAACCTCC
I A S E R A I T V K V F N N S

2881 8852 TACTGGGTGCGCGGCTCCGCAACCTCCGCAACTCCGCGCAAT
D W A A R G H R S S A N S A I

2896 8897 TCCGTTGTGGTCCAGCGCCAGGCTCCGTCGGTGTGTGGTCACT
S V V V Q P Q A S V G A V V T

2911 8942 TTGGACAGCAGCAACCTCCGCGGCTCTGCTCTGCGCTCAAT
I D S S N P A A G L H L Q L I

2926 8987 TATACGCTGTCTGGCT
T T L L D G

9032

2941

9077

2956

9122 TACGAGT
S F

2971

2986 9167 TACCCAGCGGGGAGTTACCATCTGAGCTCTCCAGCACTTCCTC
Y P A G S Y H L N L S S H F F

3001 9212 TGGTGGCGCTGCAGGTGTCCGTGGGCTGTACAGTCCCTGTGC
V S A L Q V S V G L Y T S L C

9257 TACTACTTCACTGATGAGGATCTGATGAGGACAGAGAGCT

[illegible]

9977 t g e t t e t t g a c a a c c a t e r g g e t e r c a t a t d g g a c c g g c c c
3256 t f f f d k h i w l s i w d r f

10022 t e t c a t a c c c t t t t c a c t e c a c a t e c a a g d c c a c c t g e t g e g t i
3271 r k s r f t r i o k a t c c v

10067 t e c t a t e t g g e t e t t e c t a g g g e n t a a c f e c a t g t g a t a c g e
3286 l l i c l f l g a n a v w y c

10112 t e t g t t d c c a a c t e t c c e t a c a c t
3301 a v g d s a y t

10157 t a c c a g a c c a g g t g e t g a c a t e g a c a g e t t e c t g g a c t e g t e c c a t o
3316 t o o v l d i d s c l d s s v

10202 t g g a c a g c t e c t t e c t c a g g t t e t c a g g e c t c c a c g e t g a c k
3331 d s s f l t f s g l h a e f

10247 t g g t e g g t g t g e t g g c c e t c e c g g c a g g a a c g e t c a g t t g g c c c
3346 l l v c w p s g e g t l s w f

10292 t a c c t g e t c a g t g a c c c g t e c a t t g t g g t a g c a a t e t g c g g c a c
3361 l l l s d p s i v g s n l r t

10337 t g g c a c g g g g c c a g g c g g c c a t e g g c t g g g c c c a g a g g a g a c
3376 a r g o a g h g l g p e e i

10382 t g e t t e t c c e t g g c c a g c c c t a c t e g g e t g c c a a a t c e t t e t e a
3391 f s l a s p y s p a k s f t

10427 t a t c a a c
3406 a s

10472 t a c c a g a c c a g g t g e t g a c a t e g a c a g e t t e c t g g a c t e g t e c c a t o
3421 t o o v l d i d s c l d s s v

10517 t g g c a c g g g g c c a g g c g g c c a t e g g c t g g g c c c a g a g g a g a c
3436 a r g o a g h g l g p e e i

10562 t g e t t e t c c e t g g c c a g c c c t a c t e g g e t g c c a a a t c e t t e t e a
3451 f s l a s p y s p a k s f t

10607 t a t c a a c
3466 a s

10652 t a c c a g a c c a g g t g e t g a c a t e g a c a g e t t e c t g g a c t e g t e c c a t o
3481 t o o v l d i d s c l d s s v



FIG 1 Cont.

Exon 35

10697 **3496** [REDACTED]
[REDACTED] S S T P G E K T E T I

10742 **3511** [REDACTED]
[REDACTED] A L O R L G E L G P P S P G I

10787 **3526** [REDACTED]
[REDACTED] T W E O P O A A R L S R T

10832 **3541** [REDACTED]
[REDACTED]

10877 **3556** [REDACTED]
[REDACTED]

10922 **3571** [REDACTED]
[REDACTED]

10967 **3586** [REDACTED]
[REDACTED]

Exon 37

11012 **3601** [REDACTED]
[REDACTED] V L L E A L Y F

11057 **3616** [REDACTED]
[REDACTED] V A K R L H P D E D D T L V

11102 **3631** [REDACTED]
[REDACTED] S P A V T P V S A R V P R V

11147 **3646** [REDACTED]
[REDACTED] R P P H G F A L F L A K E E A

11192 **3661** [REDACTED]
[REDACTED] R K V K R L H G M L R

11237 **3676** [REDACTED]
[REDACTED]

11282 **3691** [REDACTED]
[REDACTED]

11327 **3706** [REDACTED]
[REDACTED] S I

11372 [REDACTED]
[REDACTED]

Exon 39



FIG 1 Cont.

3721
3736
3751
3766
3781
3796
3811
3826
3841
3856
3871
3886
3901
3916
3931
3946

11417
11462
11507
11552
11597
11642
11687
11732
11777
11822
11867
11912
11957
12002
12047

Exon 41
Exon 43

3961
12092
3976
12137
3991
12182
4006
12227
4021
12272
Exon 45
4036
12317
4051
12362
4066
12407
4081
12452
4096
12497
4111
12542
4126
12587
4141
12632
4156
12677
4171
12722
4186
12767



FIG 1 Cont.

4201	12812	[REDACTED]	
		[REDACTED]	
4216	12857	[REDACTED]	
		[REDACTED]	
4231	12902	[REDACTED]	
		[REDACTED]	
4246	12947	[REDACTED]	
		[REDACTED]	
4261	12992	[REDACTED]	
		[REDACTED]	
4276	13037	[REDACTED]	
		[REDACTED]	
4291	13082	[REDACTED]	13120
		[REDACTED]	



FIG 2

Exon 1-Homolog 1

Query: 3844 ccgaggacgccacagcgctgtgagtagcgggccagcgccacccgggagaggccggga 3903
 |||
 Sbjct: 16586 ccgaggacgccacagcgctgtgagtagcgggccagcgccacccgggagaggccggga 16645

Query: 3904 cggcgggcggtggcggttccctggccgggacgggaagcaggacgaggccaggacgc 3963
 |||
 Sbjct: 16646 cggcgggcggtggcggttccctggccgggacgggaagcaggacgaggccaggacgc 16705

Query: 3964 tcccagggcgaggctccggcgcgccagcgggccctgctaaataaggaacgcctggag 4023
 |||
 Sbjct: 16706 tcccaggg-cgaggctccggcgcgccacagcgg-cctgctaaataaggaacgcctggag 16763

Query: 4024 ccgcggttggcacggcccggggagccgaaaaacccgggtctggagacagacgtccac 4083
 |||
 Sbjct: 16764 ccgcggttggcacggcccggggagccgaaaaacccgggtctggagacagacgtccac 16823

PstI

Query: 4084 cgggggctctgcagacgccagggggggggcgcgaggccgctcagctgggagga 4143
 |||
 Sbjct: 16824 cgggggctctgcagacgccagggggggcgcgaggccgctcagctgggagga 16883

Query: 4144 caaacagtcgctaattggagaggaattgggattcgccctggggctgcggggtacccggag 4203
 |||
 Sbjct: 16884 caaacagtcgctaattggagaggaattgggattcgccctggggctgcggggtacccggag 16943

Query: 4204 aggtggggtggctgtagggggcgaggaagagttccaggaggtgtctgaaaaggat 4263
 |||
 Sbjct: 16944 agatggggtggctgtagggggctgcaggaagagttccaggaggtgtctggacaaggat 17003

Exon 1-Homolog 1

Query: 3844 ccgaggacgccacagcgctgtgagtagcgggccagcgccacccgggagaggccggga 3903
 |||
 Sbjct: 16586 ccgaggacgccacagcgctgtgagtagcgggccagcgccacccgggagaggccggga 16645

Query: 3904 cggcgggcggtggcggttccctggccgggacgggaagcaggacgaggccaggacgc 3963
 |||
 Sbjct: 16646 cggcgggcggtggcggttccctggccgggacgggaagcaggacgaggccaggacgc 16705

Query: 3964 tcccagggcgaggctccggcgcgccagcgggccctgctaaataaggaacgcctggag 4023
 |||
 Sbjct: 16706 tcccaggg-cgaggctccggcgcgccacagcgg-cctgctaaataaggaacgcctggag 16763

FIG 2 Cont.

Stretch of Exon 6-Homolog 1

Query: 21589 tcgttcccaccggtctccagcgggtgcacccgctctgcccctcggacacggagatcttccc 21648
 |||||
 Sbjct: 23917 tcgttcccaccggtctccagcgggtgcacccgctctgcccctcggacacggagatcttctc 23976

Query: 21649 tggcaacgggcactgctaccgcctgggtgggagaaggcggcctggctgcaggcgagga 21708
 |||||
 Sbjct: 23977 tggcaatgggcactgctaccgcctgggtgggagaaggcggcctggctgcaggcgagga 24036

StuI
 Query: 21709 gcagtgtcaggcctgggcccggggccgcctggcaatgggtggacagtcgccgcgtgcagcg 21768
 |||||
 Sbjct: 24037 gcagtgtcgggcctgggcccggggccaccctggcaatgggtggacagtcgccgcgtgcagcg 24096

Stretch of Exon 6-Homolog 2

Query: 21589 tcgttcccaccggtctccagcgggtgcacccgctctgcccctcggacacggagatcttccc 21648
 |||||
 Sbjct: 63611 tcgttcccaccggtctccagcgggtgcacccgctctgcccctcggacacggagatcttctc 63670

Query: 21649 tggcaacgggcactgctaccgcctgggtgggagaaggcggcctggctgcaggcgagga 21708
 |||||
 Sbjct: 63671 tggcaacgggcactgctaccgcctgggtgggagaaggcggcctggctgcaggcgagga 63730

Query: 21709 gcagtgtcaggcctgggcccggggccgcctggcaatgggtggacagtcgccgcgtgcagcg 21768
 |||||
 Sbjct: 63731 gcagtgtcgggcctgggcccggggccaccctggcaatgggtggacagtcgccgcgtgcagcg 63790



Stretch of Exon 10-Homolog 1

Stretch of Exon 10-Homolog 2

Query:	23622	aaatcaggggccccaacaccctcccctcctcacagggaccccgaggaacggcagcgagcct	23681
Sbjct:	65628	gaatcaggggccccaacaccctcccctcctcgagggaaccccgaggaacggcagcgagcct	65687
Query:	23682	gagagcaggtccccggacaacaggaccagctggccccccgctgcatgccagggggagcg	23741
Sbjct:	65688	gagagcaggtccccggacaacaggaccagctggccccccgctgcatgccagggggagcg	65747
Query:	23742	tggtgccttgaggccaacatctgcttgccgctggacgcctcctgccaccccaggcctgc	23801
Sbjct:	65748	tggtgccttgaggccaacatctgcttgccgctggacgcctcctgccacccc-aggcctgc	65806
Query:	23802	gccaatggctgcacgtcaggggccagggtacccggggcccccctatgcgctatggagaga	23860
Sbjct:	65807	gccaatggctgcacgtcaggggccagggtactccggggcccccctatgcgctatggagaga	65866
Query:	23861	gttcctcttctcgttcccgcggggccccccgcgcagtaactcggtgtgtggccctgacct	23920
Sbjct:	65867	gttcctcttctcgttcccgcggggccccccgcgcagtaactcggtgtgtggccctgacct	65926
Query:	23921	gggtctgttccctgcattctcctcaggccaccttctgtctgctgccagggtctgggtct	23980
Sbjct:	65927	gggtctgttccctgcattctcctcaggccaccttctgtctgctgccagggtctgggtct	65986



FIG 2 Cont.

Exon 11-Homolog 1

Query: 24267 agccctgcgtgtccaccctcatccgtcgtgcgggggtccacgggccatgaccgtgaggac 24326
 |||||||
 Sbjct: 26604 agccctgcgtgtccaccctcatccgtcgtgcgggggtccacgggccatgaccgtgaggac 26663

Query: 24327 gtgatgcagccctgcctccctctccacaggtcacccctccacggccaggatgtcctcatgc 24386
 |||||||
 Sbjct: 26664 gtgatgcagccctgcctccctctccacaggtcacccctccacggccaggatgtcctcatgc 26723

Query: 24387 tccctgggtgacctcgttggcttgacgacgacgctggccctggcgccctcctgcactgct 24446
 |||||||
 Sbjct: 26724 tccctgggtgacctcgttggcttgacgacgacgctggccctggcgccctcctgcactgct 26783

XmaI

Query: 24447 cgccggctcccgccaccctgggtcccgggcccggtacctctccgccaacgcctcgteat 24506
 |||||||
 Sbjct: 26784 cgccggctcccgccaccctgggtcccgggcccggtacctctccgccaacgcctcgteat 26843

Query: 24507 ggctgccccacttgccagcccagctggagggcacttgggctgcccctgcctgtgccctgc 24566
 |||||||
 Sbjct: 26844 ggctgccccacttgccagcccagctggagggcacttgggctgcccctgcctgtgccctgc 26903

Query: 24567 ggctgcttgacgcccaggaacagctcaccgtgctgctgggcttgagggccaaccctggac 24626
 |||||||
 Sbjct: 26904 ggctgcttgacgcccaggaacagctcaccgtgctgctgggcttgagggccaaccctggac 26963

Query: 24627 tgcggctgctggcgctatgaggtccgggacagaggtgggcaatggcgtgtccaggcaca 24686
 |||||||
 Sbjct: 26964 tgcggctgctggcgctatgaggtccgggacagaggtgggcaatggcgtgtccaggcaca 27023

Query: 24687 accctctcctgcagctttgacgtggtctccccagtggtgggctgcccgtcatctaccctg 24746
 |||||
 Sbjct: 27024 accctctcctgcagctttgacgtggtctccccagtggtgggctgcccgtcatctaccctg 27083

Query: 24747 cccccgcgacggccgctctacgtgccaccaacggctcagccttggtgctccagggtg 24806
 |||||||
 Sbjct: 27084 cccccgcgacggccgctctacgtgccaccaacggctcagccttggtgctccagggtg 27143

Query: 24807 actctggtgccaacgcccacggcctcgctggcctggggcagtgctcagcgcccgt 24866
 |||||||
 Sbjct: 27144 actctggtgccaacgcccacggcctcgctggcctggggcagtgctcagcgcccgt 27203

Query: 24867 ttgagaatgtctgccctgcccgtgggacaccttcgtgcccggtgcccctgggagacca 24926
 |||||||
 Sbjct: 27204 ttgagaatgtctgccctgcccgtgggacaccttcgtgcccggtgcccctgggagacca 27263

Query: 24927 acgataccctgttctcagtggttagcactgccgtggctcagtgagggggagcacgtgatgg 24986
 |||||||
 Sbjct: 27264 atgataccctgttctcagtggttagcactgccgtggctcagtgagggggagcacgtgatgg 27323

Query: 24987 acgtggtggtggaaaacagcgccagccgggccaacctcagcctgcccgtgacggcgagg 25046
 |||||
 Sbjct: 27324 acgtggtggtggaaaacagcgccagccgggccaacctcagcctgcccgtgacggcgagg 27383

Query: 25047 agcccatctgtggcctccgcgccacgcccagccccaggcccggtgtactgcaggaggtcc 25106
 |||||||
 Sbjct: 27384 agcccatctgtggcctccgcgccacgcccagccccaggcccggtgtactgcaggaggtcc 27443



FIG 2 Cont.

Query: 25107 tagtggtgagtagtgccgaggtccaccaccagcccccagggcaggtgcctgcagacaggg 25166
 Sbjct: 27444 ca---gtgagtagtgccgaggtccaccaccagcccccagggcaggtgcctgcagacaggg 27500

Query: 25167 tgctcacacagggcgtagggcctggcttcccagtgagggcagagccagttactgggga 25226
 Sbjct: 27501 tgctcacacagggcgtagggcctggcttcccagtgagggcagagccagttactgggga 27560

Exon 11-Homolog 2

Query: 24267 agccctgcgtgtccaccctcatccgtcgtgcgggggtccacgggcatgaccgtgaggac 24326
 Sbjct: 66294 agccctgcgtgtccaccctcatccgtcgtgcgggggtccacgggcatgaccgtgaggac 66353

Query: 24327 gtgatgcagccctgctccctctccacaggtcacccctccacggccaggtatgctccatgc 24386
 Sbjct: 66354 gtgatgcagccctgctccctctccacaggtcacccctccacggccaggtatgctccatgc 66413

Query: 24387 tccctggtgacctcgttggttgagcagcagcgtggccctggcgccctcctgcactgct 24446
 Sbjct: 66414 tccctggtgacctcgttggttgagcagcagcgtggccctggcgccctcctgcactgct 66473

Query: 24447 cgccgggtcccgccaccctgggtcccgggcccggtacctctccgccaaacgctcgtcat 24506
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Query: 24507 ggctgccccacttgccagcccagctggagggcacttgggctgcccctgctgtgccctgc 24566
 Sbjct: 66534 ggctgccccacttgccagcccagctggagggcacttgggctgcccctgctgtgccctgc 66593

Query: 24567 ggctgcttgccagccaggaacagctcacctgctgctgggcttgaggcccaacctggac 24626
 Sbjct: 66594 ggctgcttgccagccaggaacagctcacctgctgctgggcttgaggcccaacctggac 66653

Query: 24627 tgcgggtgctggcgctatgaggtccgggcagaggtgggcaatggcgtgtccaggcaca 24686
 Sbjct: 66654 tgcgggtgctggcgctatgaggtccgggcagaggtgggcaatggcgtgtccaggcaca 66713

Query: 24687 acctctcctgcagctttgacgtggtctccccagtggtgggctgcgggtcatctaccctg 24746
 Sbjct: 66714 acctgtcctgcagctttgacgtggtctccccagtggtgggctgcgggtcatctaccctg 66773

Query: 24747 cccccgcgacggccgctctacgtgcccaccaacggctcagccttggtgctccaggtgg 24806
 Sbjct: 66774 cccccgcgacggccgctctacgtgcccaccaacggctcagccttggtgctccaggtgg 66833

Query: 24807 actctggtgccaaacgcccacggccaggtcgtggcctgggggcagtgtcagcgcccgt 24866
 Sbjct: 66834 actctggtgccagcgcccacggccaggtcgtggcctgggggcagtgtcagcgcccgt 66893

Query: 24867 ttgagaatgtctgccctgccctggtggccaccttcgtgcccggtgccctgggagacca 24926
 Sbjct: 66894 ttgagaatgctgccctgccctggtggccaccttcgtgcccggtgccctgggagacca 66953

Query:	24927	acgataccctgtcttcagtggtagcactgccgtggctcagtgaggggggagcacgtggtgg	24986
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Sbjct:	67134	cagtgtgtgtagtatggccgaggctccaccaccagccccaggcaggtgcctgcagacagg	67193
Query:	25167	tgctcacacagggcgtagggcctggctccccagttaggggcagcagcccagttactgggga	25226
Sbjct:	67194	tgctcacacagggcgtagggcctggctccccagttaggggcagcagcccagttactgggga	67253

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Query:	27339	gcttctgcgcagcggtggggagcaggtgggggtgcccggtgcgccactegggcctgt	27398
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Sbjct:	69446	ccccacaggtgagtacgtcctgaccgtgctggcatcctaatagccttcgagaaccggacgca	69505
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Sbjct:	69566	cgtcctggtggcgggcggcgcccgtcaccttctaccgcacctctgctgccctgcctggggg	69625
Query:	27579	tgttctttacacgtgggaacttcggggacggctccccgtcctgaccacagagcagccggc	27638
Sbjct:	69626	tgttctttacacgtgggaacttcggggacggctccccgtcctgaccacagagcagccggc	69685
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Sbjct:	69686	tgccaaccacacatatgcctcgaggggcatctaccacgtgcgcctggagggtcaacaacac	69745
Query:	27699	ggtgagcgggtgcggcgccaggcggaatgtgcgcgtctttgaggagctccgcgggactcag	27758
Sbjct:	69746	ggtgagcgggtgcggcgccaggcggaatgtgcgcgtctttgaggagctccgcgggctcag	69805
Query:	27759	cgtggacatgagccttggccgtggagcagggcgcccccggtggtgcagcccgcggtgca	27818

A circular black and white stamp. The text "OIPE" is at the top, "JUL 26 2002" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom, all within a circular border.

Sbjct: 69806 cgtggacatgagcctggccgtggagcagggcgccccctggtggtcagtgccgcggtgca 69865

Query: 27819 gacgggacgacacatcacgtggacaccttcacatgggggacggcacctgctgtcgggccc 27878
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Sbjct: 69866 gacgggacgacacatcacgtggacaccttcacatgggggacggcacctgctgtcgggccc 69925

Query: 27879 ggaggcaacagtgagcatgtgtacctgccccacagaaatgcacagtgacccgtgggtgc 27938
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Sbjct: 69926 agaggccaacagtgagcatgtgtacctgccccacagaaatgcacagtgacccgtgggtgc 69985

Query: 27939 ggccagccccgcgggccacctggccccgagcctgcacgtgctggtcttcgtcctggaggt 27998
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Sbjct: 69986 ggccagccccgcgggccacctggccccgagcctgcacgtgctggtcttcgtcctggaggt 70045

Query: 27999 gctgcgcgttgaacccgcgcctgcatccccacgagcctgacgcgcggctcacggccta 28058
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Sbjct: 70046 gctgcgcgtgagccccgcgcctgcatccccactcagcctgacgcgcggctcacggccta 70105

Query: 28059 cgtcacccgggaacccggccacctactcttcgactggacaccttcggggatggctcctccaa 28118
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Sbjct: 70106 cgtcacccgggaacccggccacctactcttcgactggacaccttcggggatggctcctccaa 70165

Query: 28119 cagcaccgtgcgggggtgcccgacggtgacacacaacttcacgcggagcggcacgttccc 28178
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Sbjct: 70286 ggagccagaggtgggcaacgtcacccctgcagccagagaggcagtttgcagctcgggga 70345

Query: 28299 cgaggcctggctggtggcatgtgctggcccccggtccctaccgctacacctgggactt 28358
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Sbjct: 70346 cgaggcccggtggtggcatgtgctggcccccggtccctaccgctacacctgggactt 70405

Query: 28359 tggcaccagggaagccgccccccaccgtgcaggggcccctgaggtgacgttcatctaccg 28418
|||||

Sbjct: 70406 tggcaccaggaagccgctccccgccgtgctgggggcccctgaggtgacgttcatctaccg 70465

Query: 28419 agaccagagctcctatcttctgacagtcaccgcgtccaacaacatctctgctgccaatga 28478
|||||

Sbjct: 70466 agaccagagctcctatcttctgacagtcaccgcgtccaacaacatctcegctgccaatga 70525

Query: 28479 ctcagccctggtggaggtgcaggagcccgctgctggtcaccagcatcaaggtaaatggctc 28538
|||||

Sbjct: 70526 ctcagccctggtggaggtgcaggagcccatgctggtcaccagcatcaaggtaaatggctc 70585

Query: 28539 ccttgggctggagctgcageagccgtacctgttctctgctgtgggcccgtgggcgccccgc 28598
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Sbjct: 70586 ccttgggctggagctgcagtagccgtacctgttctctgctgtgggcccgtgggcgccccgc 70645

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|||||

Sbjct: 70646 cagctacctgtgggatctgggggacggtgggcggctcgaggggtccggaggtcaccacgc 70705

Query: 28659 ttacaacagcacagggtgacttcaccggttagg-tggccggctggaatgaggtgagccgcag 28717

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Shict: 71066 7112

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[illegible]

Example: 20137 - tangerine-rose-gold-honeycomb-stone-embossed-metallic-2019

.....

|||||

Query: 29250 agccctgcggggctggctgatggctggccgcccccccgaaaccagctgcctcgaataaaaagcgg 2931

Query: 29316 tcaccctcagtgccgagctggctgggtggcagtggtgtcgtatacacttggctccttggagg 2937

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Sbjct: 71423 aggggctgagctgggagaccccgagccattaccaccacagcttccccacaccggcc 7148

Query: 29436 tgcacttggtcaccatgacggcaggggaacccgctgggctcagccaacgccaccgtggaag 2949

Sbjct: 71483 tgcacttggtcaccatgacggcagggaaacccgctgggctcagccaacgccaccgtggaag 7154



FIG 2 Cont.

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Query: 29556 tcgtggcgccgggtcctctgtgcccttttgggggcagctggccacgggcaccaatgtga 29615
 Sbjct: 71603 tcgtggcgccgggtcctctgtgcccttttgggggcagctggccacgggcaccaatgtga 71662

Query: 29616 gctggtgctgggtgtgcccggcgagcagcaagcgtggccctcatgtcaccatggtct 29675
 Sbjct: 71663 gctggtgctgggtgtgcccggcgagcagcaagcgtggccctcatgtcaccatggtct 71722

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 Sbjct: 71723 tcccggatgctggcaccttcaacatccgggtcaatgcctccaacgcagtcagctgggtct 71782

Query: 29736 cagccacgtacaacctcacggcgaggagcccatcgtgggcctggtgctgtgggccagca 29795
 Sbjct: 71783 cagccacgtacaacctcacggcgaggagcccatcgtgggcctggtgctgtgggccagca 71842

Query: 29796 gcaaggtggtggcgcccgggcagctggtccattttcagatcctgctggctgccggctcag 29855
 Sbjct: 71843 gcaaggtggtggcgcccgggcagctggtccattttcagatcctgctggctgccggctcag 71902

PstI XmaI

Query: 29856 ctgtcaccttcgcctgcaggctcgccggggccaaccccgaggtgctcccgggcccgctt 29915
 Sbjct: 71903 ctgtcaccttcgcctgcaggctcgccggggccaaccccgaggtgctcccgggcccgctt 71962

Query: 29916 tctccacagcttcccccgctcgagaccacgtggtgagcgtgcccgggcaaaaaccacg 29975
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Query: 29976 tgagctggggccaggcgaggtgcgcacgtggtgctggaggccgtgagtggtgcagg 30035
 Sbjct: 72023 tgagctggggccaggcgaggtgcgcacgtggtgctggaggccgtgagtggtgcagg 72082

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Query: 30096 tgcagcgcggtctctcggtgcctacgcctggtacttctcgctgcagaaggtccagggcg 30155
 Sbjct: 72143 tgcagcgcggtctctcggtgcctacgcctggtatttctcgctgcagaaggtccagggcg 72202

Query: 30156 actcgtggtcactcctgtcggggcgagcgtcacctacacgcccgtggccggggctgt 30215
 Sbjct: 72203 actcgtggtcactcctgtcggggcgagcgtcacctacacgcc-gtggccggggctgt 72261

BssHII

Query: 30216 tggagatccaggtgcgcgcttcaacgcccctgggcagtgagaaccgcacgctggtgctgg 30275
 Sbjct: 72262 tggagatccaggtgcgcgcttcaacgcccctgggcagtgagaaccgcacgctggtgctgg 72321

PstI

Query: 30276 aggttcaggacgcccgtccagtatgtggccctgcagagcgccctgcttcaccaaccgct 30335
 Sbjct: 72322 aggttcaggacgcccgtccagtatgtggccctgcagagcgccctgcttcaccaaccgct 72381

A circular stamp from the OIPE Patent & Trademark Office. The text "OIPE" is at the top, "JUL 26 2002" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom. To the right of the stamp, the text "JSC21 E31C" is visible.

Query:	30336	cgccgcagttttgaggccgccaccagcccccagccccgctgtggccctaccactgggact	30395
Sbjct:	72382	tgccgcagtttgaggccgccaccagcccccagccccgctgtggccctaccactgggact	72441
Query:	30396	ttggggatgggtgcggcagggcaggacacagatgagccacgggcccagcactcctacctga	30455
Sbjct:	72442	ttggggatgggtgccccagggcaggacacagataagcccagggcccagcactcctacctga	72501
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Sbjct:	72562	aggccacggtgaccgctccagggtgctggccctgccgggagccggagggtggacgtggtcctgc	72621
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Query:	30816	ttggggacacgccactgacacagagcatccaggccaatgtgacggtggcccccgagcgcc	30875
Sbjct:	72862	ttggggacacgccactggcacggagcatccaggccaatgtgacggtggcccccgagcgcc	72921
Query:	30876	tggtgccatcatagggtgggtcataccgcgtgtggtcagacacacaggacgtggtgc	30935
Sbjct:	72922	tggtgccatcaactagggtgggtcctaccgcgtgtggtcagacacacaggacgtggtgc	72981
Query:	30936	tggatgggagcgagtcctacgaccccaacctggaggacggcgaccagacgcgcgtcagtt	30995
Sbjct:	72982	tggatgggagcgagtcctacgaccccaacctggaggacggcgaccagacgcgcgtcagtt	73041
Query:	30996	tccactgggcctgtgtggcttcgacacaggtcagtcgctggcaggggccgtctcctatgcc	31055
Sbjct:	73042	tccactgggcctgtgtggcttcgacacaggtcagtcgctggcaggggccgtctcctatgcc	73101
Query:	31056	cctcaccgtccacacccatgagccagagagaacaccagcttgccaccagggtggtccgc	31115
Sbjct:	73102	cctcaccgtccacacccatgagccagagagaacaccagcttgccaccagggtggtccgc	73161

Exon 16-Homolog 2

Query: 31356 ggaaggccggccgcaaggaggaggccaccaaccagacggtgggtgccgccgccctcg 31415
Sbjct: 73402 ggaaggccggccgcaaggaggaggccaccaaccagacggtgggtgccgccgccctcg 73461



FIG 2 Cont.

Exon 20-Homolog 1

Query: 33189 agccaggccgtgggagggcgccccgagactgccacctgctcaccacccc-ctctgctcg 33247
 |||||
 Sbjct: 31282 agccaggccgtgggagggcgccccgagactgccacctgctcaccaccccgtctgctcg 31341

Query: 33248 taggtctttggccatcaccctcccagagcccaacggcagcgcaacggggctcacagtctg 33307
 |||||
 Sbjct: 31342 taggtctctggccatcaccctcccagagcccaacggcagcgcaatggggctcacagtctg 31401

Query: 33308 gctgcacggggtcacccgctagtgtgctcccagggtgctgcggcaggccgatccccagca 33367
 |||||
 Sbjct: 31402 gctgcacggggtcacccgctagtgtgctcccagggtgctgcggcaggccgatccccagct 31461
 XmaI

Query: 33368 cgtcatcgagtactcgttggccctgggtcacctgctgaacgaggtgagtgcagcctggga 33427
 |||||
 Sbjct: 31462 cgtcatcgagtactcgttggccctgggtcactgtgctgaacgaggtgagtgcagcctggga 31521

AatII

Query: 33428 ggggacgtcacatctgctgcatgctgcttgggaccaagacctgtaccctgcctggagc 33487
 |||||
 Sbjct: 31522 ggggacgtcacatctgctgcatgctgcttgggaccaagacctgttccctgcctggagc 31581

Exon 20-Homolog 2

Query: 33216 gactgccacctgctcacca-ccccctctgctcgttaggtctttggccatcacctcccaga 33274
 |||||
 Sbjct: 75262 gactgccacctgctcaccaccccctctgctcgttaggtctctggtccatcacctcccaga 75321

Query: 33275 gcccaacggcagcgcaacgggggtcacagtctggctgcacggggtcacccgctagtgtgct 33334
 |||||
 Sbjct: 75322 gcccaacggcagcgcaatgggggtcacagtctggctgcacggggtcacccgctagtgtgct 75381

Query: 33335 cccagggtgctgcggcaggccgatccccagcacgtcatcgagtactcgttggccctggt 33394
 |||||
 Sbjct: 75382 cccggggctgctgcggcaggccgatccccagcacgtcatcgagtactcgttggccctggt 75441

Query: 33395 caccgtgctgaacgaggtgagtgacgctgggaggggacgtcacatctgctgcatgctg 33454
 |||||
 Sbjct: 75442 cactgtgctgaacgaggtgagtgacgctgggaggggacgtcacatctgctgcatgctg 75501



FIG 2 Cont.

Exon 22-Homolog 1

Query: 36719 atgtgaagaggtgccttgtgtggtcggtgggctgcatcacgtggtccccaggtggaggcc 36778
 Sbjct: 32576 atgtgaagaggtgccttgtgtggtcggtgggctgcatcacgtggtccccaggtggaggcc 32635

Query: 36779 ctgggtcatgcagagccacagaaaatgcttagtgaggaggctgtgggggtccagtcagt 36838
 Sbjct: 32636 ctgggtcatgcagagccacagaaaatgcttagtgaggaggactgtgggggtccagtcagt 32695

Query: 36839 gggctctccagctgcagggtcggtggggtgggagccaggtgaggaccgtgtagagaggagg 36898
 Sbjct: 32696 gggctctccagctgcagggtcggtggggtgggagccaggtgaggaccgtgtagagaggagg 32755

Query: 36899 gcgtgtgcaaggagtggtgggcccaggagcggtgggctggacactgctggctccacacaggggcc 36958
 Sbjct: 32756 gcgtgtgcaaggagtggtgggcccaggagcggtgggctggacactgctggctccacacaggggcc 32815

Query: 36959 cagcagggagctcgtatgccgctcgtgcctgaagcagacgctgcacaagctggaggccat 37018
 Sbjct: 32816 cagcagggagctcgtatgccgctcgtgcctgaagcagacgctgcacaagctggaggccat 32875

Query: 37019 gatgctcatcctgcaggcagagaccaccgcggtgacgcccaccgcatcggaga 37078
 Sbjct: 32876 gatgctcatcctgcaggcagagaccaccgcggtgacgcccaccgcatcggaga 32935

FspI

NlaIII

Query: 37079 cagcatcctcaacatcacaggtgccgcggtggcccggtgccccatgccaccgcccccccc 37135
 Sbjct: 32936 cagcatcctcaacatcacaggtgccgcggtggcccggtgccccatgccaccgcccccccc 32992



FIG 2 Cont.

Exon 22-Homolog 2

Query: 36719 atgtgaagaggtgccttgtgtggtcggtgggtgcatcacgtgtccccaggtggaggcc 36778
 |||||||
 Sbjct: 75778 atgtgaagaggtgccttgtgtggtcagtggtgcatcacgtgtccccaggtggaggcc 75837

Query: 36779 ctgggtcatgcagagccacagaaaaatgcttagtgaggaggctgtgggggtccagtcaagt 36838
 |||||||
 Sbjct: 75838 ctgggtcatgcagagccacaaaaatgcttagtgaggaggctgtgggggtccagtcaagt 75897

Query: 36839 gggctctccagctgcagggtctgggggtgggagccaggtgaggaccctgttagagaggagg 36898
 |||||||
 Sbjct: 75898 gggctctccagctgcagggtctgggggtgggagccaggtgaggaccctgttagagaggagg 75957

Query: 36899 gcgtgtgcaaggagtggtggccaggagcggggctggacactgctggctccacacaggggcc 36958
 |||||||
 Sbjct: 75958 gcgtgtgcaaggagtggtggccaggagcggggctggacactgctggctccacacaggggcc 76017

Query: 36959 cagcaggagctcgtatgccgctcgtgcctgaagcagacgctgcacaagctggaggccat 37018
 |||||||
 Sbjct: 76018 cagcaggagctcgtatgccgctcgtgcctgaagcagacgctgcacaagctggaggccat 76077

Query: 37019 gatgctcatcctgcaggcagagaccacgcgggacccgtgacgccaccgccatcggaga 37078
 |||||||
 Sbjct: 76078 gatgctcatcctgcaggcagagaccacgcgggacccgtgacgccaccgccatcggaga 76137

Query: 37079 cagcatcctcaacatcacaggtgccgcggcccggtgccccatgccaccgcccgcccc 37135
 |||||||
 Sbjct: 76138 cagcatcctcaacatcacaggtgccgcggcccggtgccccatgccaccgcccgcccc 76194

FIG 2 Cont.

Exon 23-Homolog 1

Query: 37663 cctccctgtctctgcaactgacctcacgcatgtctgcaggagacctcatccacctggccag 37722
 Sbjct: 33404 cctccctgtctctgcaactgacctcacgcatgtctgcaggagacctcatccacctggccag 33463

Query: 37723 ctccgacgtgcgggcaccacagccctcagagctgggagccgagtcaccatctcggatggt 37782
 Sbjct: 33464 ctccgacgtgcgggcaccacagccctcagagctgggagccgagtcaccatctcggatggt 33523

Query: 37783 ggctgccaggccctacaaactgacctctgccctcatgcgcacccatctcgcctcccgct 37842
 Sbjct: 33524 ggctgccaggccctacaaactgacctctgccctcatgcgcacccatctcgcctcccgct 33583

Query: 37843 gctcaacgaggagccctgacgtggcgggcgaggagatcgtggccaggggcaagcgctc 37902
 Sbjct: 33584 gctcaacgaggagccctgacgtggcgggcgaggagatcgtggccaggggcaagcgctc 33643

Query: 37903 ggaccgcgggagcctgctgtgctatggcgggcgcccgaggcctggctgccacttctccat 37962
 Sbjct: 33644 ggaccgcgggagcctgctgtgctatggcgggcgcccgaggcctggctgccacttctccat 33703

MscI
 Query: 37963 ccccgaggctttcagcggggccctggccaaactcagtgacgtggtgcagctcatctttct 38022
 Sbjct: 33704 cccctaggctttcagcaggggcccgccaaactcagtgacgtggtgcagctcatctttct 33763

Query: 38023 ggtggactccaatccctttccctttggtatatacagcaactacacgctctccaccaaggt 38082
 Sbjct: 33764 ggtggactccaatccctttccctttggtatatacagcaactacacgctctccaccaaggt 33823

Query: 38083 ggccctcgatggcattccagacacaggccggcgcccgagatcccatcgagcggtggcctc 38142
 Sbjct: 33824 ggccctcgatggcgtttccagacacaggccggcgcccgagatcccatcgagcggtggcctc 33883

Query: 38143 agagcgcgccatcaccgtgaaggtgcccaacaactcggactgggctgccgggggccaccg 38202
 Sbjct: 33884 agagcgcgcc-tcaccgtgaaggtgcccaacaactcggactgggctgccgggggccaccg 33942

Query: 38203 cagctccgccaactccgccaactccgttgtgtccagccccaggcctccgtcggtgctgt 38262
 Sbjct: 33943 cagctccgccaact-----ccgttgtgtccagccccaggcctccgtcggtgctgt 33993

Query: 38263 ggtcaccctggacagcagcaaccctggggccgggtgcatctgcagctcaactatacgt 38322
 Sbjct: 33994 ggtcaccctggacagcagcaaccctggggccgtgcatctgcagctcaactatacgt 34053

Query: 38323 gctggacggtgcgtgcagcggtggggcacacgcggccccctggccttgttcttggggg 38382
 Sbjct: 34054 gctggacggtgcagcggttggggcacacgcggccccctggccttgttcttggggg 34113

SphI





FIG 2 Cont.

Exon 23-Homolog 2

Query: 37663 cctccctgtctctgcaactcacgcctgtctgcaggagacctcatccacctggccag 37722
|||||
Sbjct: 76762 cctccctgtctctgcaactcacgcctgtctgcaggagacctcatccacctggccag 76821

Query: 37723 ctccgacgtgcgggaccacagccctcagagctgggagccgagtcaccatctcggatggt 37782
||| |||||
Sbjct: 76822 ctccgacgtgcgggaccacagccctcagagctgggagccgagtcaccattgcggatggt 76881

Query: 37783 ggcgctccaggccctacaacctgacctctgccctcatgcgcacccatgcgctcccgct 37842
|||||
Sbjct: 76882 ggcgctccaggccctacaacctgacctctgccctcatgcgcacccatgcgctcccgct 76941

Query: 37843 gctcaacgaggagccctgacgctggcgggcgaggagatcgtggccagggcaagcgctc 37902
|||||
Sbjct: 76942 gctcaacgaggagccctgacgctggcgggcgaggagatcgtggccagggcaagcgctc 77001

Query: 37903 ggaccgcgggagcctgctgtgctatggcgggcgccaggccctggctgccacttctccat 37962
|||||
Sbjct: 77002 ggaccgcgggagcctgctgtgctatggcgggcgccaggccctggctgccacttctccat 77061

Query: 37963 ccccgaggctttcagcgggggccctggccaacctcagtgacgtggtgcagctcatctttct 38022
||| |||||
Sbjct: 77062 ccccgaggctttcagcgggggccctggccaacctcagtgacgtggtgcagctcatctttct 77121

Query: 38023 ggtggactccaatcccttttcccttggctatatcagcaactacacgctctccaccaaggt 38082
|||||
Sbjct: 77122 ggtggactccaatcccttttcccttggctatatcagcaactacacgctctccaccaaggt 77181

Query: 38083 ggccctcgatggcattccagacacaggccggcgccagatcccatcgagcggtggcctc 38142
|||||
Sbjct: 77182 ggccctcgatggcattccagacacaggccggcgccagatcccatcgagcggtggcctc 77241

Query: 38143 agagcgcgccatcaccgtgaagggtgcccaactcggactgggctgcccggggccaccg 38202
|||||
Sbjct: 77242 agagcgcgccatcaccgtgaagggtgcccaactcggactgggctgcccggggccaccg 77301

Query: 38203 cagctccgccaactccgccaactccgttgggtccagccccaggccctccgtcggtgctgt 38262
|||||
Sbjct: 77302 cagctc-----cgccaactccgttgggtccagccccaggccctccgtcggtgctgt 77352

Query: 38263 ggtcaccctggacagcagcaacctggggcggggtgcattctgcagctcaactatacgt 38322
|||||
Sbjct: 77353 ggtcaccctggacagcagcaacctggggcggtgctgcattctgcagctcaactatacgt 77412

Query: 38323 gctggacggtgctgagcggtggggcacacgccccctggccttgttcttgggggg 38382
|||||
Sbjct: 77413 gctggacggtgctgagcggtggggcacacgccccctggccttgttcttgggggg 77472

Exon 29 and 30-Homolog 1

Query: 41535 ttttgcgcttccggcgccctgctggtggctgagctgcagcgttgcttctttgacaagcaca 41594
Sbjct: 37269 tgttgcgcttccggcgccctgctggtggctg-gctgcagcgttgcttctttgacaagcaca 37327

Query: 41595 tctggctctccatatgggaccggcgccctcgtagccgtttcactcgcattccagagggcc 41654
Sbjct: 37328 tctggctctccatatgggaccggcgccctcgtagctgtttcactcgcattccagagggcc 37387

Query: 41655 cctgctgcgttctcctcatctgcctcttctctggggcccaacgcgctgtggtacggggctg 41714
Sbjct: 37388 cctgctgcgttctcctcatctgtctcttctctggggcccaacgcgctgtggtacggggctg 37447

Query: 41715 ttggcgactctgcctacaggtgggtgccgtagggttcggggcagcctcttctctgccagc 41774
Sbjct: 37448 ttggagactctgcctacaggtgggtgccgtagggttcggggcagcctcttctctgccagc 37507

Query: 41775 ccttctctgccctcagcctcacctgtgtggcctctctctcctccacacagcagggggcatg 41834
Sbjct: 37508 ccttctctgccctcagcctcacctgtgtggcctctctctcctccacacagcagggggctg 37567

Query: 41835 tgtccaggctgagcccgctgagcgtcgacacagtcgctgttggcctggtgtccagcgtgg 41894
Sbjct: 37568 tgtccaggctgaacccgctgagcgtcgacacagtcgctgttggcctggtgtccagcgtgg 37627

Query: 41895 ttgtctatcccgctcacttgccatccttttctcttccggatgtcccgaggacaaggtgg 41954
Sbjct: 37628 ttgtctatcccgctcacttgccatcctcttctcttccggatgtcccgaggacaaggtgg 37687

Query: 41955 gctggggctggggaccgggagtaactgggaatggagcctgggctcggcaccatgacctag 42014
Sbjct: 37688 gctggggctggggaccgggagtaactgggaatggagcctgggctcggcaccatgacctag 37747

Query: 42015 ggccgccactttccagtgctgcagccagagggaaggcgctccaccaaaaggctgctcgga 42074
Sbjct: 37748 ggccgccactttccagtgctgcagccagagggaaggcgctccaccaaaaggctgctcgga 37807

Exon 29 and 30—Homolog 2

Query:	41535	ttttgcgcttccggcgccctgctggttgctgagctgcagcgtggcttctttgacaagcaca	41594
Sbjct:	80620	tgtttgcgcttccggcgccctgctggttgctgagctgcagcgtggcttctttgacaagcaca	80679
Query:	41595	tctggctctccatatgggaccggccgcctcgtagccgtttcactcgcattccagagggcc	41654
Sbjct:	80680	tctggctctccatatgggaccggccacctcgtagctgtttcactcgcattccagagggcc	80739
Query:	41655	cctgctgcgtttctctcatctgcctcttctctgggcgccaacgcgctgtggtacggggctg	41714
Sbjct:	80740	cctgctgcgtttctctcatctgcctcttctctgggcgccaacgcgctgtggtacggggctg	80799
Query:	41715	ttggcgactctgcctacaggtgggtgccgtaggggtcggggcagcctcttctgcccaagc	41774
Sbjct:	80800	ttggcgactctgcctacaggtgggtgccgtaggggtcgggacagcctcttctgcccaagc	80859
Query:	41775	ccttctgcctctcagcctcacctgtgtggcctctctctctccacacagcaggggcatg	41834
Sbjct:	80860	ccttctgcctctcagcctcacctgtgtggcctctctctctccacacagcaggggcatg	80919
Query:	41835	tgtccaggctgagcccgctgagcgtcgacacagtcgctgttgccctggtgtccagcgtgg	41894
Sbjct:	80920	tgtccaggctgagcccgctgagcgtcgacacagtcgctgttgccctggtgtccagcgtgg	80979
Query:	41895	ttgtctatcccgctacctggccatcctttttctcttccgagtgctccggagcaaggtgg	41954
Sbjct:	80980	ttgtctatcccgctacctggccatcctttttctcttccgagtgctccggagcaaggtgg	81039
Query:	41955	gctggggctggggaccgggagtagctgggaatggagcctgggctcggcaccatgcccag	42014
Sbjct:	81040	gctggggctggggaccgggagtagctgggaatggagcctgggctcggcaccatgcccag	81099
Query:	42015	ggccgccactttccagtgctgcagccagaggggaaaggcgctccaccaaaaggctgctcgga	42074
Sbjct:	81100	ggccgccactttccagtgctgcagccagaggggaaaggcgctccaccaaaaggctgctcgga	81159



FIG 3

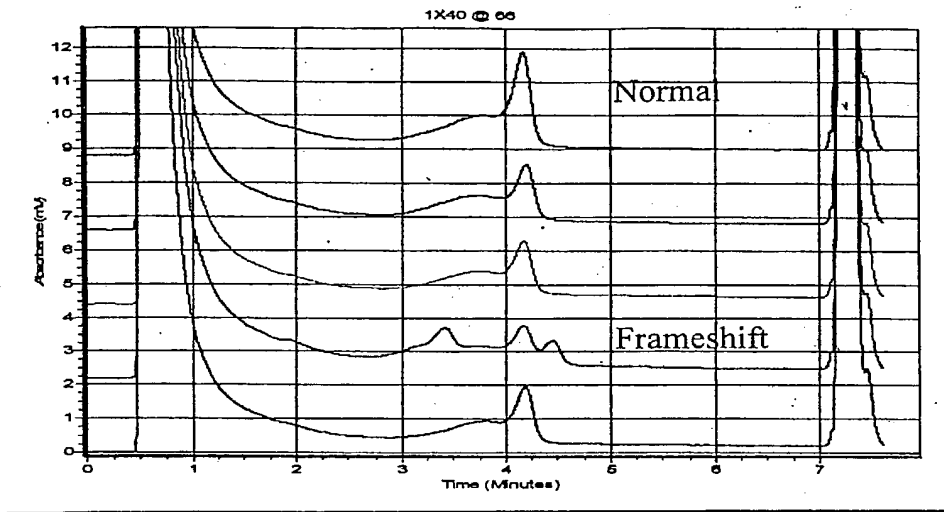




FIG 5

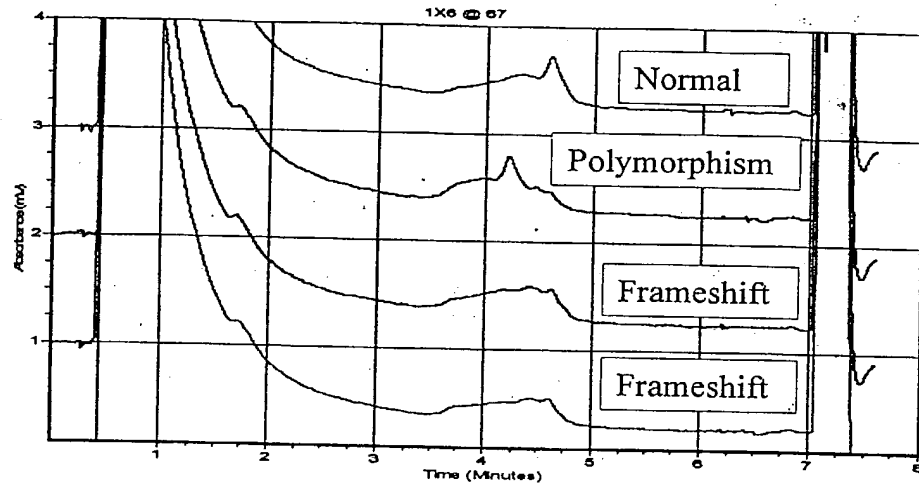




FIG 6

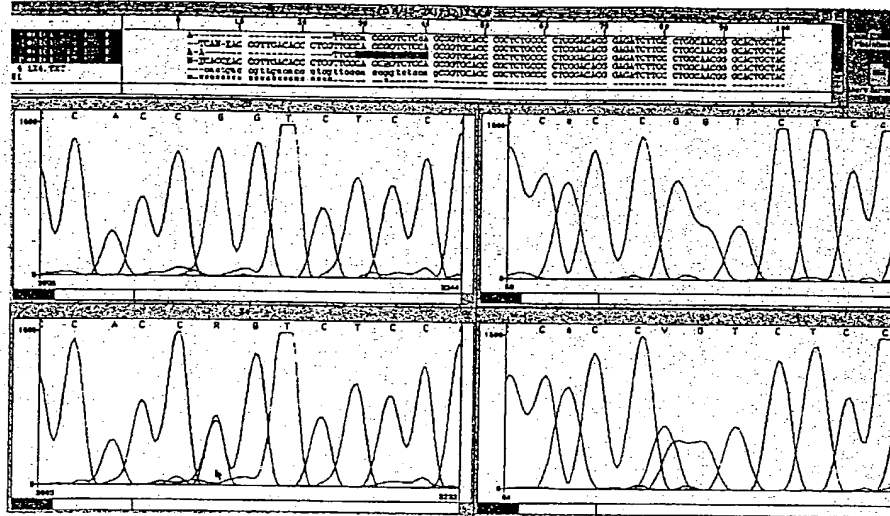




FIG 7

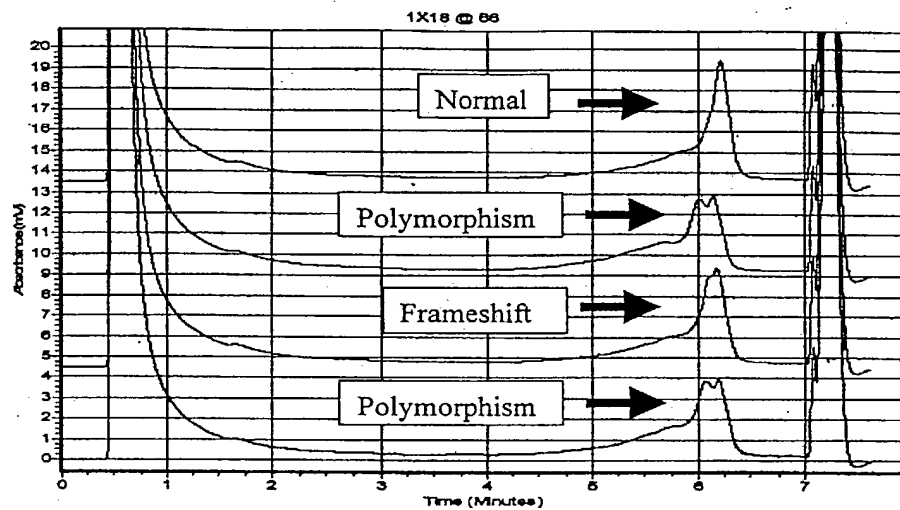




FIG 8

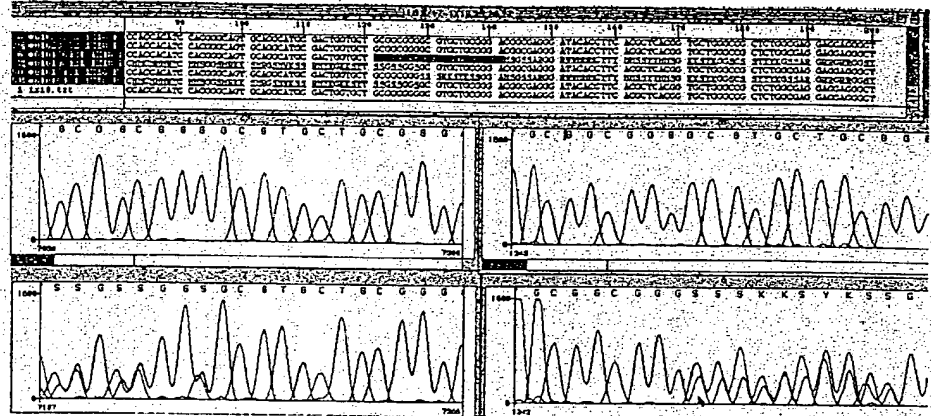




FIG 9

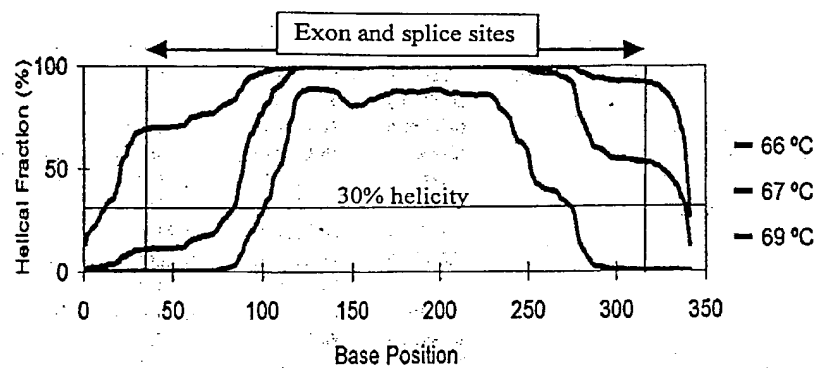




FIG 10 A

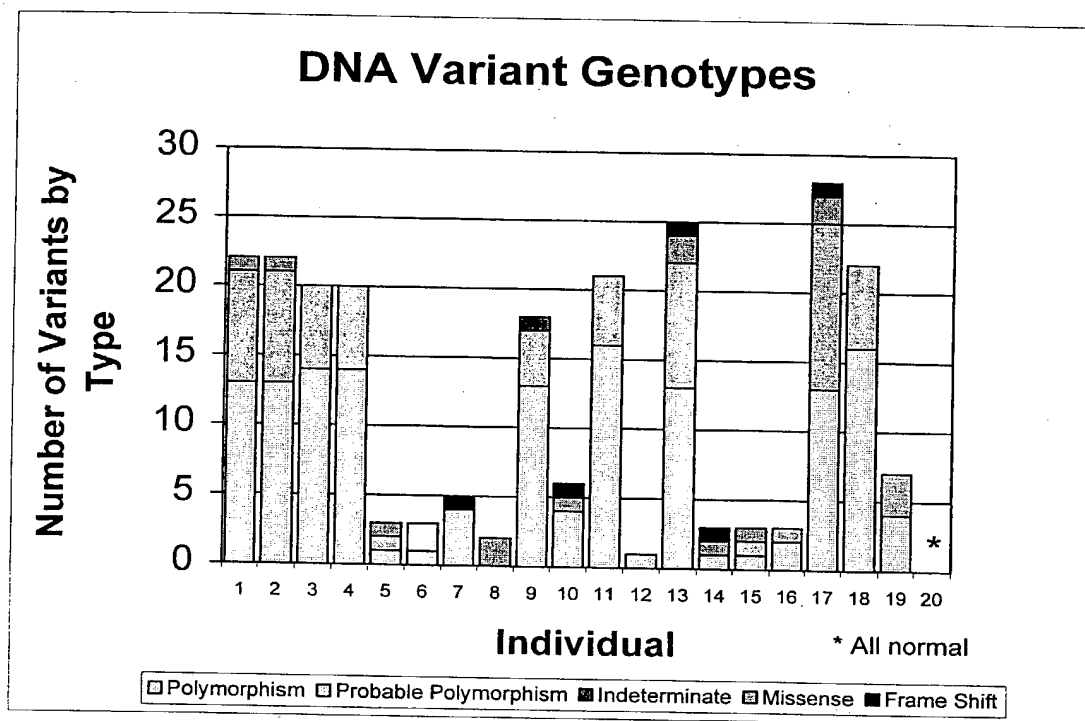




FIG 10 B

	Polymorph	Probable	Missense	Frame Shi	Indeterminate	
1	13	8	1	0	0	22
2	13	8	1	0	0	22
3	14	6	0	0	0	20
4	14	6	0	0	0	20
5	1	1	1	0	0	3
6	1	2	0	0	0	3
7	4	0	0	1	0	5
8	0	0	2	0	0	2
9	13	4	0	0	1	18
10	4	0	1	1	0	6
11	16	5	0	0	0	21
12	0	1	0	0	0	1
13	13	9	2	1	0	25
14	1	0	1	1	0	3
15	1	1	1	0	0	3
16	2	1	0	0	0	3
17	13	12	2	1	0	28
18	16	6	0	0	0	22
19	4	3	0	0	0	7
20	0	0	0	0	0	0

FIG 11

Gene		Exon	Ampli- con	Temp	PC Ret Time	PC Height	NC Ret Time	NC Height
1	x	1						
1	x	2		66	2.25-6.5	0.8-3.2	2-6.5	0.9-3.6
1	x	2		67	0.7-5.8	0.8-3.2	0.7-5.8	1-4
1	x	3		56	4.2-6.8	1-4	4-6.75	1.1-4.4
1	x	3		57	3.5-6.5	0.7-2.8	4-6.5	1-4
1	x	4		66	2-6.8	1-4	2-6.8	0.8-3.2
1	x	4		67	1.5-6	0.5-2.0	1.5-6	1.1-4.4
1	x	5	A	66	2.6-4.6	1.3-5.4	2.7-4.7	1.3-5.2
1	x	5	B	67	2-6.5	0.4-7.0	3-6.5	0.5-4.6
1	x	5	C	67	3-6.5	1-4	3-6.5	1.2-4.8
1	x	5	C	68	1.7-5.8	0.7-2.8	2.5-5.8	1-4
1	x	6		66	3.5-5.9	0.3-1.5	3.9-5.9	1.0-4.2
1	x	6		67	2.5-5.4	0.5-2.0	3.4-5.4	1-4.2
1	x	6		68	2.2-4.8	0.3-1.4	2.8-4.8	0.7-3.0
1	x	7		66	2.7-6.25	0.5-2.0	3-6.25	0.6-2.4
1	x	7		68	1.5-5	0.9-3.6	1.5-5	0.6-2.4
1	x	8		68	1.5-5	1.3-5.2	1.7-5	1-4
1	x	9		67	3.5-6.5	0.5-2.0	3.5-6.8	0.25-2.0
1	x	10		65	2.5-6.5	0.9-3.6	3-6.5	1.9-7.6
1	x	10		67	1.5-5	1.5-6	1.5-5	2-8
1	x	11	A	67	1.5-6.5	0.7-2.8	2-6.5	2-8
1	x	11	A	68	1.5-5.5	0.8-3.2	2-5.8	1.3-5.2
1	x	11	B	66	3-6.8	1-4	3-6.8	1-4
1	x	11	B	67	2-6	1.5-6	2-6	1.2-4.8
1	x	11	C	66	4.2-6.2	1.5-6	4.2-6.2	2.5-10.2
1	x	11	C	67	3.6-5.6	1.7-7	3.6-5.6	2.3-9.2
1	x	11	C	68	2.9-4.9	1.1-4.6	2.8-4.8	1.7-6.8
1	x	12		63	4.4-6.6	0.6-2.4	4.7-6.7	1-4
1	x	12		65	2.8-4.8	0.4-1.6	2.6-5.4	0.4-1.8
1	x	13						
1	x	14		66	1.5-5.5	0.6-2.4	0.7-5.5	0.6-2.4
1	x	15	A	67	2.5-6.5	0.8-3.2	2.5-6.5	1-4
1	x	15	A	68	1.5-5.75	1-4	1.5-5.75	1.2-4.8
1	x	15	B	67	2-5.75	0.5-2.0	2.75-5.75	1-4
1	x	15	B	68	1.5-5.25	0.6-2.4	2.5-5.5	0.9-3.6
1	x	15	C	68	2-6.5	0.4-1.6	2-6.5	0.8-3.2
1	x	15	C	69	1.5-6	0.5-2.0	1.5-6	0.75-3.0
1	x	15	D	67	3.75-7.25	1.5-6	3.75	7.25
1	x	15	D	68	3-6.5	1-4	3-6.5	1.2-4.8
1	x	15	E	65	3-6.5	1-4	3-6.5	1.5-6
1	x	15	E	66	2-6	0.8-3.2	2-6	1.3-5.2
1	x	15	F	65	4-7	1.4-5.6	3.75-7	1.2-4.8
1	x	15	F	66	3-6.5	1-4	3-6.5	1-4
1	x	15	F	67	1.5-5.75	1.3-5.2	1.5-5.75	1-4
1	x	15	G	66	3-6	0.8-3.2	3-6	1.1-4.4
1	x	15	G	68	1.5-4.5	1-4	1.5-4.5	1.5-6

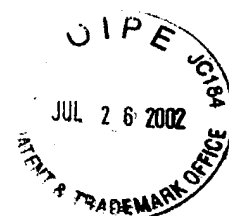




FIG 11 Cont.

1	x	15	H	65	2-6.5	1.5-6	2-6.5	1.5-6
1	x	15	H	66	1.5-5.5	1-4	1.5-5.75	1-4
1	x	15	I	66	3-7	2-8	3-7	1.8-7.2
1	x	15	I	67	2.5-6.5	1.5-6	2.5-6.5	1.5-6
1	x	15	J	64	4-7.5	2.2-8.8	4-7.5	2-8
1	x	15	J	65	4-7	2-8	4-7	1.5-6
1	x	15	J	66	3-6.5	1.5-6	2-6.5	1.1-4.4
1	x	15	K	65	3.5-6.5	1-4	3.75-6.5	0.8-3.2
1	x	15	K	66	3-6.5	0.7-2.8	3.5-6.5	0.6-3.2
1	x	15	K	67	2-6	0.6-2.4	2-5.5	0.5-2.0
1	x	15	L					
1	x	15	M	66	4.5-7	1-4	4.5-7	1.5-6
1	x	15	M	67	4-6.75	1-4	4-6.75	1.3-5.2
1	x	15	N					
1	x	16		67	1.5-5.5	2.25-9	2.0-5.5	3-13
1	x	17		65	2.5-6	1.5-6	2.5-6	1.75-7
1	x	17		66	1.5-5	1.25-5	1.5-5	1.75-7
1	x	18		66	3-6.5	2-8	3-6.5	3.25-13
1	x	18		67	4-6.4	3.8-16	4.25-6.25	6.2-24.8
1	x	18		68	1.5-5	2.5-10	1.5-5	2.75-11
1	x	19		67	3-6.5	1.5-6	3-6.5	3-12
1	x	19		68	3.0-6.5	1.5-6	3-6.5	3-12
1	x	20		65	3.5-6.5	2-8	3.5-6.5	2.25-9
1	x	20		66	2.5-6	1.25-5	2.5-6	1.75-7
1	x	20		67	1.5-5.5	1.25-5	1.5-5.5	1.75-7
1	x	21		65	3-7	1.5-6	3-7	4-16
1	x	21		67	1.5-5.5	2.25-9	1.5-5.5	4.5-18
1	x	22		66	4-7.5	2-8	4-7	2-8
1	x	22		67	3-7.25	1.5-6	3.5-6.5	1.5-6
1	x	23	A	65	3.5-6.5	0.75-3.0	3.5-6.5	1.5-6.0
1	x	23	A	66	2.5-6.0	0.5-2.0	2.5-6.0	1.25-5.0
1	x	23	A	68	1.5-4.5	2.5-10.0	1.5-4.5	2.5-10.0
1	x	23	B	63	3.5-7.25	1.5-6	3.5-7.25	1.5-6
1	x	23	B	66	1.5-6.5	0.9-3.5	1.5-6.5	1-4
1	x	23	B	67	1.25-5.5	1-4	1.25-5.5	1-4
1	x	23	C	61	3-6.25	1.5-6	3-6.25	3.25-13
1	x	23	C	66	1.5-5	2.25-9	2.5-5	4.25-17
1	x	23	C	67	1.5-5	2.75-11	2-5	5.5-22
1	x	24		65	2.5-6.0	0.5-2.0	2.5-6.0	0.6-3.0
1	x	25		65	2-6	0.7-4	2-6	0.7-4
1	x	25		67	1.5-4.5	2-8	1.5-4.5	2-8
1	x	26		64	2.5-6	0.9-3.6	2.5-6	0.9-3.6
1	x	26		66	1.5-4.5	1.75-7	1.5-4.5	1.75-7
1	x	27		65	3.5-6.7	1.5-6	3.5-6.7	1.5-6
1	x	27		66	2.5-6	2-8	2.5-7	1.25-5
1	x	28		66	1.5-5.75	1-4	1.5-5.75	1-4
1	x	29		65	1.5-6.25	1.5-6	1.5-6.25	3-12
1	x	29		66	1.5-5.25	1.5-6	1.5-5.25	2.5-8.5
1	x	30						



FIG 11 Cont.

1	x	31		66	3-6.5	2.5-10	3-6.5	1-4
1	x	31		68	1.5-5.5	1.5-6	1.5-5.5	0.5-2
1	x	32		62	2-6.5	1.25-5.0	2-6.5	3.5-14
1	x	33		64	4.2-6.2	1.4-6	4.3-6.3	1.5-6
1	x	33		67	2.5-4.7	0.8-3.5	2.7-4.7	1.2-4.8
1	x	34						
1	x	34						
1	x	35		64	4.3-6.6	1.4-5.5	4.5-6.5	2.4-9.5
1	x	35		66	2.6-5.1	1.1-4.4	3.1-5.1	1.75-7
1	x	36		66	3.3-5.7	0.5-2.0	3.6-5.6	1-4
1	x	36		67	2.7-5.1	0.6-2.5	3.1-5.1	1.1-4.4
1	x	37		64	3-5.75	0.65-2.6	3.7-5.7	1.1-4.5
1	x	37		66	2-4.75	0.9-3.6	2.7-4.7	1-4
1	x	38		65	3.5-6.5	1.1-4.5	4.3-6.3	1.6-6.5
1	x	38		66	3-5.75	0.7-3.0	3.5-5.5	1-4
1	x	39		66	1.5-4.5	1.1-4.6	2-4.6	1.25-3.0
1	x	39		67	1.5-4	1.25-3.0	1.5-4	0.7-3.0
1	x	40		66	1.5-5.5	0.6-2.5	3.25-5.25	0.7-3.0
1	x	41		67	2.5-5.75	0.9-3.6	3.75-5.75	1.1-4.4
1	x	42		70	2.75-5.75	0.5-2.0	3-5.8	0.3-1.2
1	x	42		71	2.5-4.5	0.7-3.0	2.6-4.6	0.6-2.4
1	x	43		67	4-6.75	0.4-1.6	4-6.75	0.6-2.4
1	x	43		68	3.75-6.5	0.4-1.6	3.75-6.5	0.6-2.4
1	x	43		70	2.25-5.25	0.25-2	2.25-5.25	0.6-2.4
1	x	44		66	3.25-5.75	0.5-2.0	3.7-5.7	0.8-3.2
1	x	45		65	3.5-6.25	0.4-1.6	4.1-6.1	0.9-3.6
1	x	45		66	2.5-5.5	0.4-1.6	3.5-5.5	0.8-3.2
1	x	46	A	66	4.25-6.5	0.4-1.6	4.4-6.4	0.8-3.2
1	x	46	A	67	3.25-5.25	0.3-1.2	3.5-5.5	0.5-2.0
1	x	46	B	65	4-6.75	1-4	4-6.75	1.2-4.8
1	x	46	B	68	1.75-4.75	1.3-5.2	1.75-4.75	1.5-6
2	x	1	A	70	3-6	1.5-6	3-6	1-4
2	x	1	A	71	2-5.75	0.6-2.4	2-5.75	0.9-3.6
2	x	1	A	72	1.5-5.25	0.5-3.0	1.5-5.25	0.5-2
2	x	1	B	67	2.5-6.5	0.6-2.5	2.5-6.5	0.6-2.5
2	x	1	B	70	1.5-4.5	0.7-3	1.5-4.5	1-4
2	x	1	B	71	1-4	0.5-2	1-4	0.7-3
2	x	1	C	69	2.5-6.5	1.25-5	2.5-6.5	1-4
2	x	1	C	70	1.5-6.5	0.8-2.5	1.5-6.5	0.8-3.5
2	x	1	C	71	1.5-5.75	0.8-3.5	1.5-5.75	0.8-3.5
2	x	2		58	2.5-4.5	1.2-5.0	3.2-5.2	1.4-5.6
2	x	3		58	4.7-6.9	2.9-11.6	4.9-6.9	3.5-14
2	x	3		59	4.4-6.9	2.1-8.4	4.7-6.7	2.0-8.0
2	x	3		60	3.5-6.1	1.3-5.2	3.9-5.9	1.6-6.4
2	x	4		60	3.4-6.1	1.7-7.0	4.1-6.1	0.9-3.8
2	x	5		58	4.5-6.5	2.3-9.2	4.6-6.6	2.3-9.4
2	x	5		59	3.9-6.2	1.6-6.6	4.3-6.3	1.7-6.8
2	x	6		57	1.5-6.25	1.5-6	1.5-6.25	2-8
2	x	7		53	3.4-6.6	1.2-5.0	3.3-6.6	1.0-4.0



FIG 11 Cont.

2	x	7	56	2.5-4.5	2.5-10.2	2.6-5.2	1.1-4.4
2	x	8	54	3.7-6.2	1.5-6	3.7-6.2	5.5-22
2	x	8	58	3-6	0.8-3.2	2.5-6	4-16
2	x	9	54	3-6.5	0.5-2.0	3.5-6.5	1-4
2	x	9	57	1.5-4.75	0.5-2	1.5-4.75	0.5-2.0
2	x	10					
2	x	10					
2	x	11	58	2.5-6.75	2.3-9.2	2.5-6.75	2-8
2	x	11	59	1.75-6.5	1.5-6	1.5-6.5	1-4
2	x	12	60	1.5-5.75	0.7-2.8	1.5-5.5	0.8-3.2
2	x	13	60	3-6.2	1.2-4.8	4.2-6.2	1.2-5
2	x	13	61	2.5-5.5	1.2-5	2.5-5.5	0.9-4.0
2	x	14	63	2.5-4.5	1.1-4.4	3.2-5.2	2.5-10.0
2	x	15	60	2-6.5	0.9-3.6	2-6.5	1-4
2	x	15	61	1.5-6	1.3-5.2	1.5-6	1.5-6

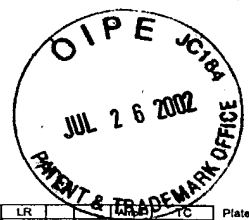


FIG 12

Verified By	Exon	Ampl. con	Long Range PCR	Mg	DMSO	Anneal Temp	Initial Denatur Temp	Initial Denature Time	# Cycles	Cycle Denatur Temp	Cycle Denature Time	Anneal Temp	Anneal Time	Ext Temp	Ext Time	Final Ext Temp	Final Ext Time	LR Dilution	Exon con	TC condition	Plate set			
			L1	1.5	7.50%	60	94	10 min	35	94	30 sec	55	30 sec	72	30 sec	72	10 min	-5	18	12	2	2		
1	18	12	L3	1.5	0	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	2	2	3	3A		
	2	2	L2	1	0%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	4	4	3	3A		
	4	4	L2	1	7.50%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	4	4	3	3A		
	5	5	A	L2	1	7.50%	61	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	5	5	A	3	3A	
	6	3	B	L2	1	7.50%	61	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	6	6	B	3	3A	
	7		C	L2	1	7.50%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	7	7	C	3	3A
	8	8	L2	1	7.50%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	8	8		3	3A	
	10		L3	1.5	0	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	10	8		3	3B	
	11	9	L3	1.5	0	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	11	9		3	3B	
	12	10	L3	1.5	0	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	12	10		3	3B	
15		C	L3	1.5	0	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	15	15	C	3	3B	
9	7	L2	1.5	7.50%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	9	7		3	3B		
3	2	L2	2	0%	61	94	10 min	35	94	30 sec	61	30 sec	72	30 sec	72	10 min	-5	3	3		3	3B		
17	13	L4	1.5	7.50%	62	94	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	-5	17	13		4	4A		
18	14	L4	1.5	7.50%	62	94	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	-5	18	14		4	4A		
13	11	A	L3	1.5	0	70	94	10 min	35	94	30 sec	70	30 sec	72	30 sec	72	10 min	-5	13	11	A	5	5A	
14		B	L3	1.5	0	70	94	10 min	35	94	30 sec	70	30 sec	72	30 sec	72	10 min	-5	14		B	5	5A	
19	15	A	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	19	15	A	6	6A	
20		B	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	20		B	6	6A	
21		C	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	21		C	6	6A	
22		D	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	22		D	6	6A	
23		E	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	23		E	6	6A	
24		F	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	24		F	6	6A	
25		G	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	25		G	6	6B	
26		H	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	26		H	6	6B	
27		I	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	27		I	6	6B	
28		J	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	28		J	6	6B	
29		K	L4	1.5	0	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	29		K	6	6B	
32		N	L5	1.5	2.50%	62	94	10 min	35	94	20 sec	62	20 sec	72	45 sec	72	5 min	10 ⁻⁴	32		N	6	6B	
31		M	Genomi	1.5	0	68	94	10 min	35	94	20 sec	68	20 sec	72	45 sec	72	5 min	100 ng	31		M	7	7A	
30		L	L4	1.5	2.50%	68	94	10 min	35	94	20 sec	68	20 sec	72	45 sec	72	5 min	10 ⁻⁴	30		L	7	7A	
33	18		L5	1.5	0	60	94	10 min	35	94	20 sec	60	30 sec	80	40 sec	72	10 min	-4	33	18		8	8A	
40	23	A	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	40	23	A	9	9A	
41		B	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	41		B	9	9A	
42		C	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	42		C	9	9A	
43	24	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	43	24		9	9A		
44	25	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	44	25		9	9A		
45	26	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	45	26		9	9A		
46	27	L7	1.5	0	62	94	10 min	35	94	20 sec	62	30 sec	72	40 sec	72	10 min	-4	46	27		9	9A		
35	18	L5	1.5	0	64	94	10 min	35	94	20 sec	64	30 sec	84	40 sec	72	10 min	-4	35	18		10	10A		
37	20	L5	1.5	0	64	94	10 min	35	94	20 sec	64	30 sec	84	40 sec	72	10 min	-4	37	20		10	10A		
47	28	L7	1.5	0	64	94	10 min	35	94	20 sec	64	30 sec	84	40 sec	72	10 min	-4	47	28		10	10A		
48	29	L8	1.5	0	64	94	10 min	35	94	20 sec	64	30 sec	84	40 sec	72	10 min	-4	48	29		10	10A		
39	22	L6	1.5	0	64	94	10 min	35	94	20 sec	64	30 sec	72	40 sec	72	10 min	-4	39	22		10	10A		
34	17	L5	1.5	0	67	94	10 min	35	94	20 sec	67	30 sec	67	40 sec	72	10 min	-4	34	17		11	11A		
36	19	L5	1.5	0	67	94	10 min	35	94	20 sec	67	30 sec	67	40 sec	72	10 min	-4	36	19		11	11A		
38	21	L5	1.5	0	69	94	10 min	35	94	20 sec	69	30 sec	72	40 sec	72	10 min	-4	38	21		12	12A		
49	30	L8	1.5	0	72	94	10 min	35	94	20 sec	72	30 sec	72	40 sec	72	10 min	-4	49	30		13	13A		
53	33	L8	1.5	7.50%	58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	-10-5	53	33		14	14A		
54	34	L8	1.5	7.50%	58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	-10-4	54	34		14	14A		
54	35		1.5	7.50%	58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	NA	54	35		14	14A		
61	42		1.5	7.50%	58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	NA	61	42		14	14A		
59	40		1.5		58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	NA	59	40		14	14A		
64	45		1.5		58	95	10 min	35	94	20 sec	58	30 sec	72	45 sec	72	10 min	NA	64	45		14	14A		
62	43		1	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	62	43		15	15A		
56	37		1.5	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	56	37		15	15A		
58	39		1.5	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	58	39		15	15A		
60	41		1.5	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	60	41		15	15A		
63	44		1.5	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	63	44		15	15A		
65	46		1.5	7.50%	62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	65	46		15	15B		
51	31	L8	1.5		62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	-10-5	51	31		15	15B		
52	32	L8	1.5		62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	-10-5	52	32		15	15B		
55	36		1.5		62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	55	36		15	15B		
57	38		1.5		62	95	10 min	35	94	20 sec	62	30 sec	72	45 sec	72	10 min	NA	57	38		15	15B		

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FIG 12 Cont.

Verified By		Exon	Ampl. con	Long Range PCR	Mg	DMSO	Anneal Temp	Initial Denatur Temp	Initial Denature Time	# Cycles	Cycle Denatur Temp	Cycle Denatur Time	Anneal Temp	Anneal Time	Ext Temp	Ext Time	Final Ext Temp	Final Ext Time	LR Dilution		Exon	Ampl. con		
	86	1	A		1.1	5%	72	95	10 min	35	95	45 sec	72	2min	72	1 min	72	10 min	NA	86	1	A	16	16A
	68		C		1.1	5%	72	95	10 min	35	95	45 sec	72	2min	72	1 min	72	10 min	NA	68		C	16	16A
	67		B		1.1	7.50%	74	95	10 min	35	95	45 sec	74	2min	74	1 min	74	10 min	NA	67		B	17	17A
	73	6			2	0	50	95	10 min	35	92	40 sec	50	40 sec	72	40 sec	72	10 min	NA	73	6		18	18A
	75	8			2	0	50	95	10 min	35	92	40 sec	50	40 sec	72	40 sec	72	10 min	NA	75	8		18	18A
	76	9			2	0	50	95	10 min	35	92	40 sec	50	40 sec	72	40 sec	72	10 min	NA	76	9		18	18A
	79	12			2	0	50	95	10 min	35	92	40 sec	50	40 sec	72	40 sec	72	10 min	NA	79	12		18	18A
	70	3			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	70	3		19	19A
	71	4			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	71	4		19	19A
	72	5			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	72	5		19	19A
	74	7			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	74	7		19	19A
	77	10			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	77	10		19	19A
	78	11			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	78	11		19	19A
	80	13			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	80	13		19	19A
	82	15			1.5	5%	55	95	10 min	35	92	40 sec	55	40 sec	72	40 sec	72	10 min	NA	82	15		19	19A
	69	2			2	0	58	95	10 min	35	92	40 sec	58	40 sec	72	40 sec	72	10 min	NA	69	2		20	20A
	81	14			2	0	62	95	10 min	35	92	40 sec	62	40 sec	72	40 sec	72	10 min	NA	81	14		21	21A



FIG 13

